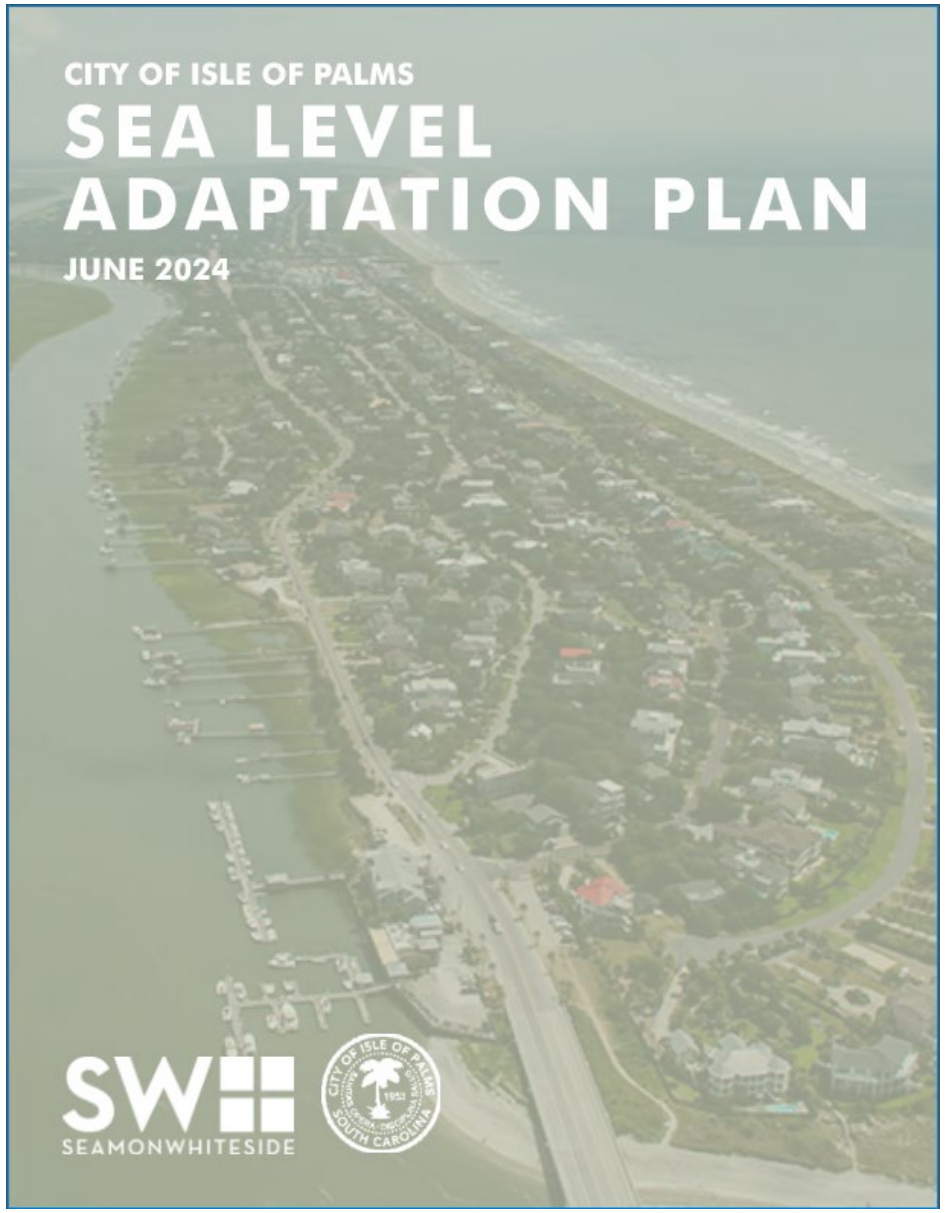
SEAMONWHITESIDE

# CITY OF ISLE OF PALMS
# SEA LEVEL RISE ADAPTATION PLAN
# PLANNING COMMISSION WORKSHOP

# AGENDA

Hurricane Joaquin (2015) flooding on Isle of Palms.

1. Project Background
2. Process
3. Sea Level Rise & Vulnerability Analysis
4. Strategies
   - Projects
   - Programs
   - Policies
5. Next Steps




## Project Goals:

1. Develop SLR projections through 2050.
2. Assess risk and vulnerable assets.
3. Develop a series of Projects, Programs & Policies.
4. Identify funding sources.
5. Create roadmap for implementation.

# PROJECT BACKGROUND

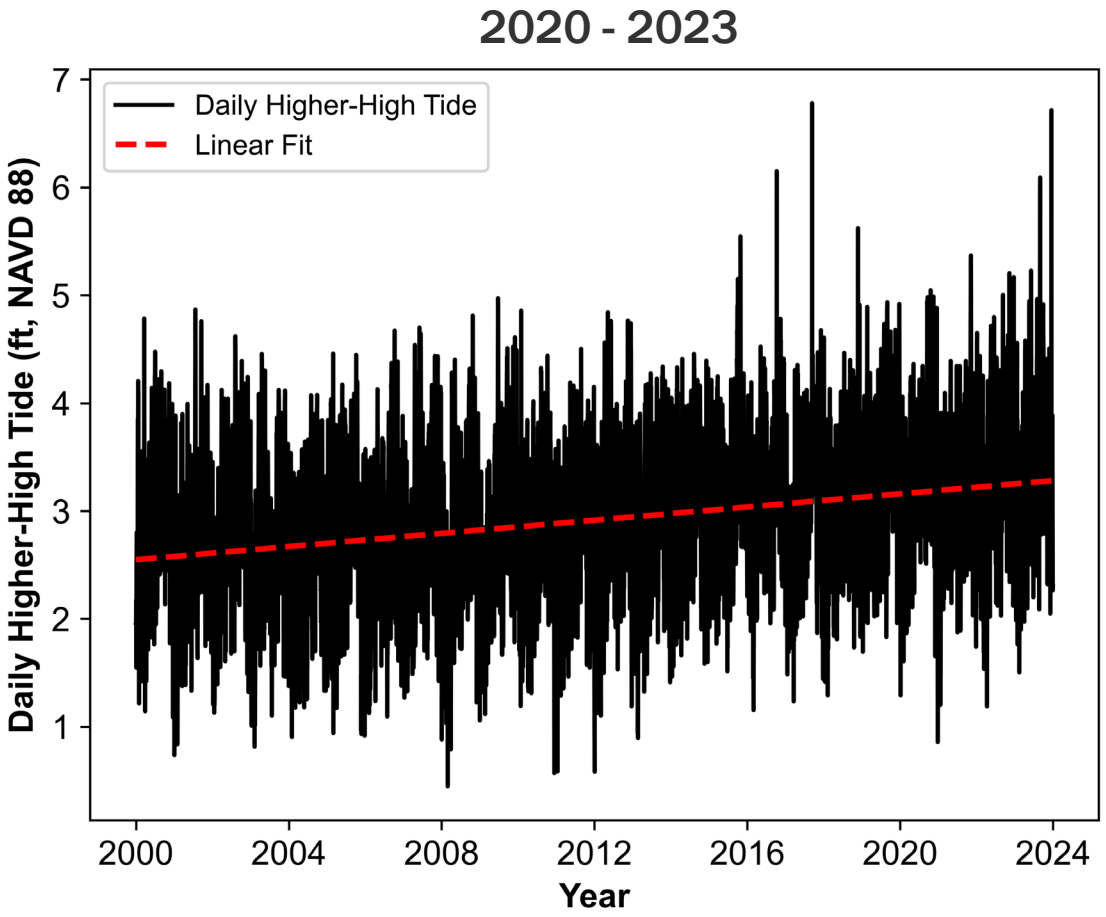

Location map depicting study area and surrounding waterways.

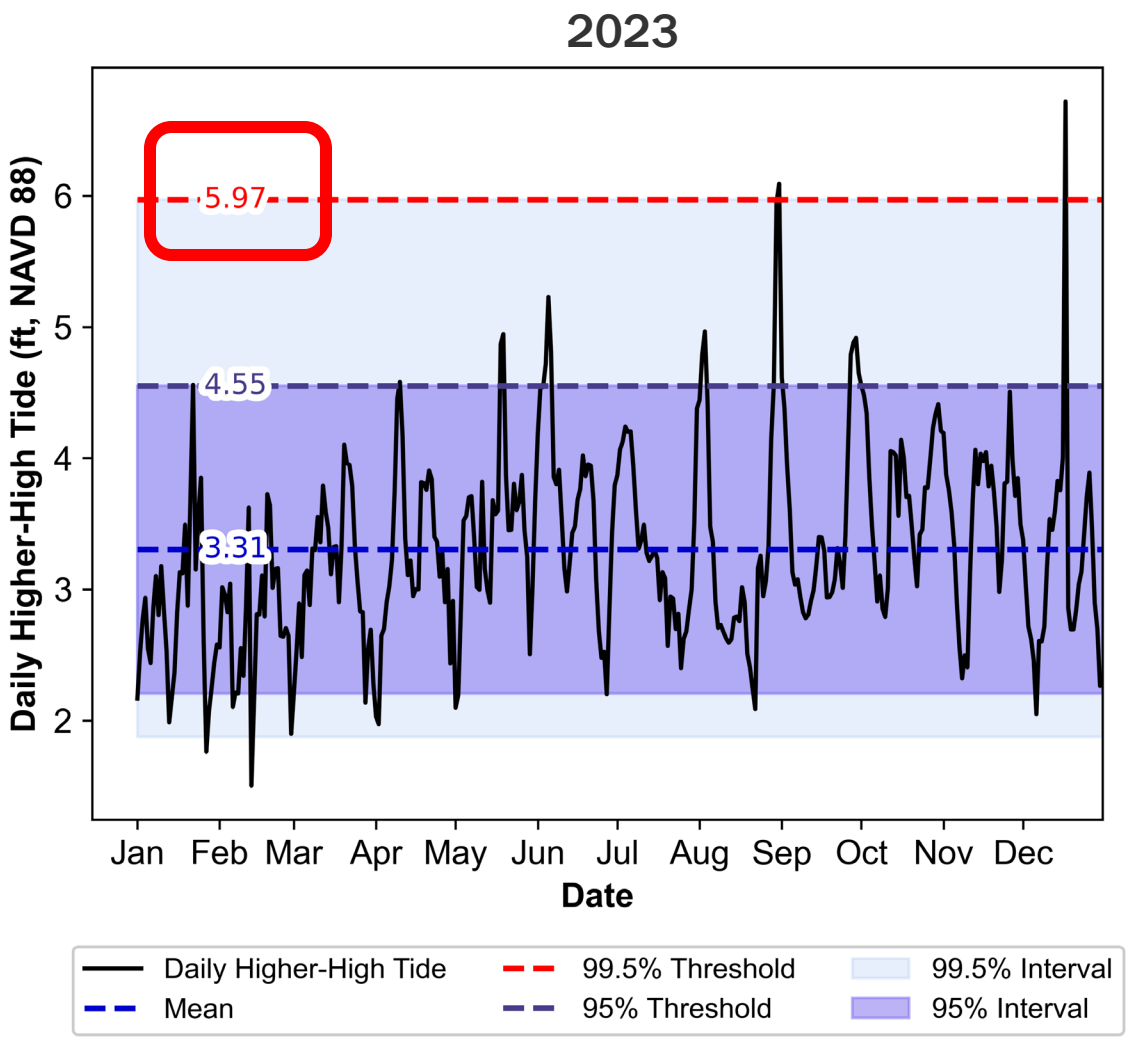
1. **Project kick off**
   - Sep. 2023
2. **Technical Review Committee**
   - Feb. 2024
3. **Planning Commission Workshop & Environmental Advocacy Meeting**
   - May 2024
4. **Public survey**
   - Draft set to launch May 2024
5. **City Council Meeting**


a) **Monitoring Locations**

1. **Water Levels**
2. **GIS Data**
   - Parcels, facilities, buildings, streets, canals, outfalls, lift stations, septic systems, census data
3. **Completed & Ongoing Studies/Projects**
   - Phase III and Phase IV drainage master plans
   - IOP Comprehensive Plan (2015)
   - Beach Management Plan (Updated 2023)

# SEA LEVEL RISE – TIDAL BENCHMARK

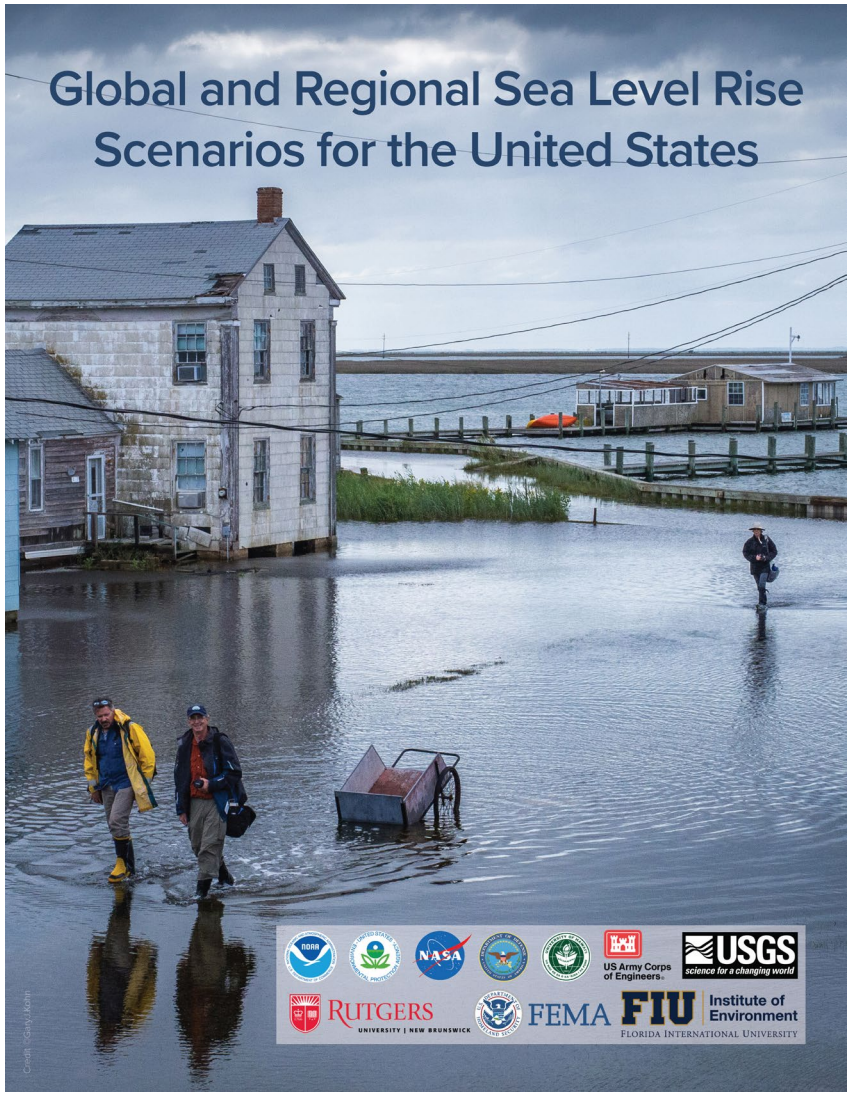


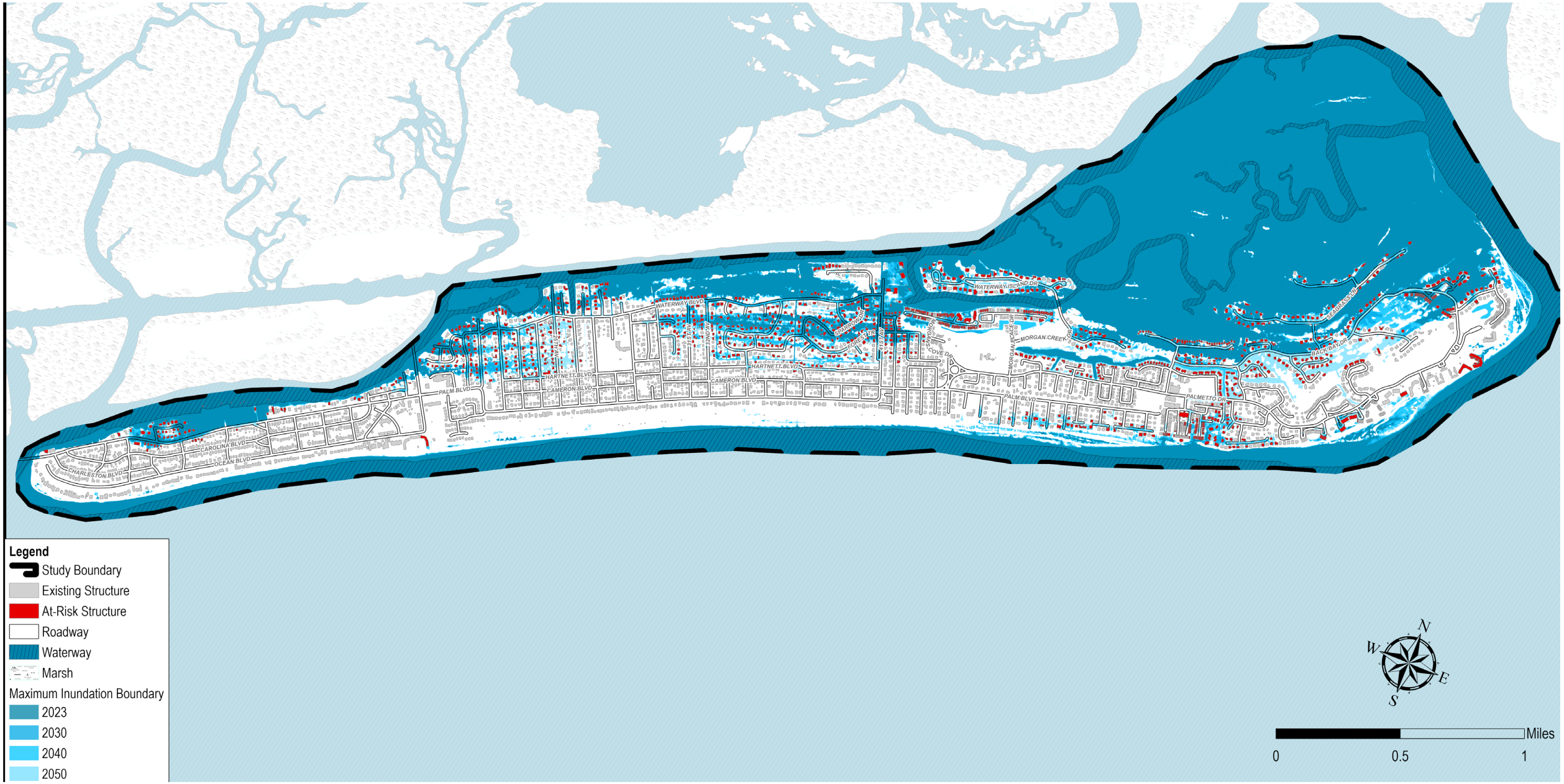
- **Targeting 1' of Sea Level Rise for the year 2050**
  - Intermediate projection + Subsidence factor
  - 5.97 + SLR + subsidence factor = 7'

- **Based on:**
  - Federal Interagency Sea Level Rise and Coastal Flood Hazard Scenarios and Tools Task Force
    - Most up-to-date SLR projections
    - Key input for 5th National Climate Assessment

- **Data informs SLR adaptation plans at all scales**



# VULERABILITY ANALYSIS



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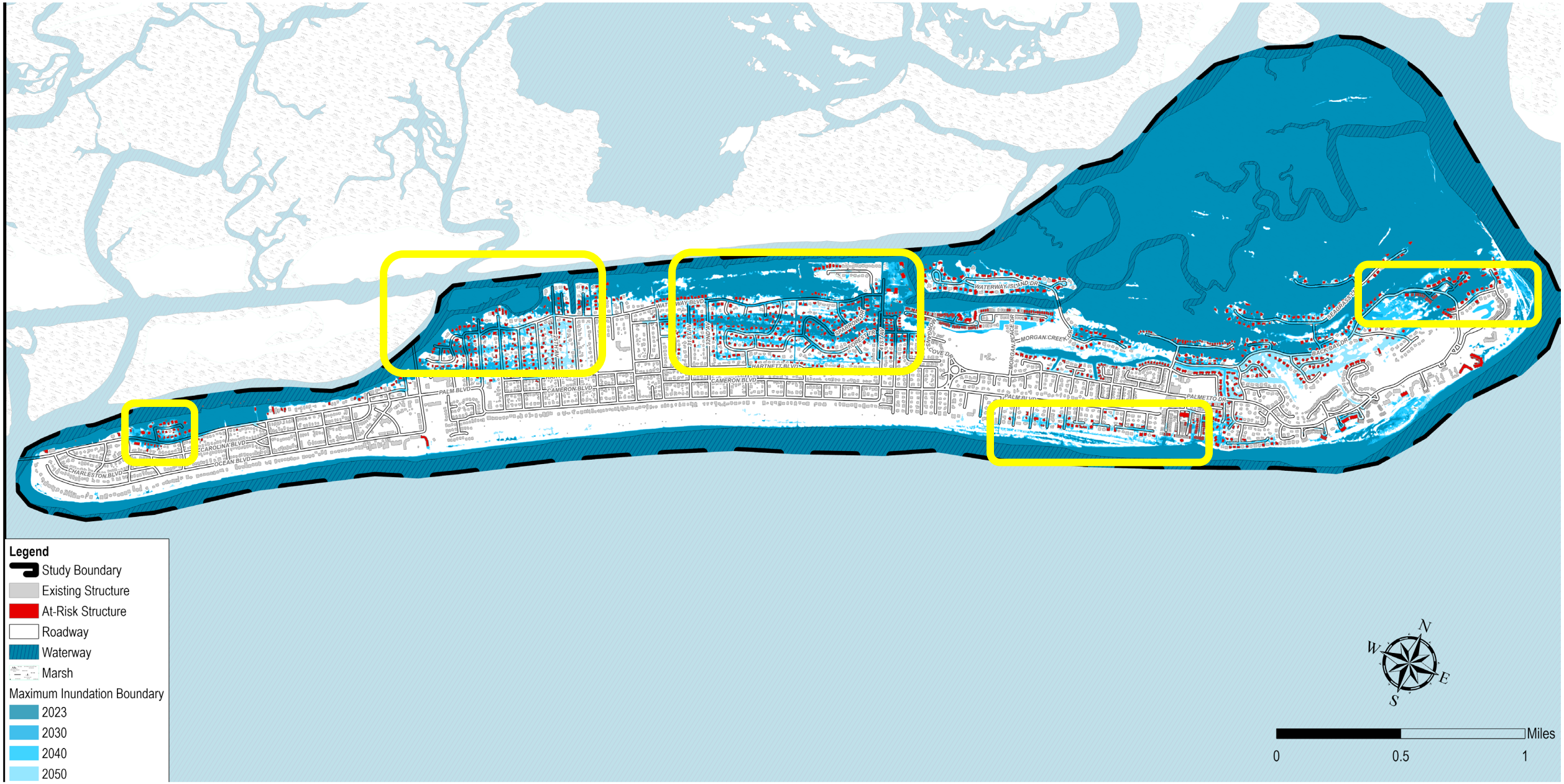
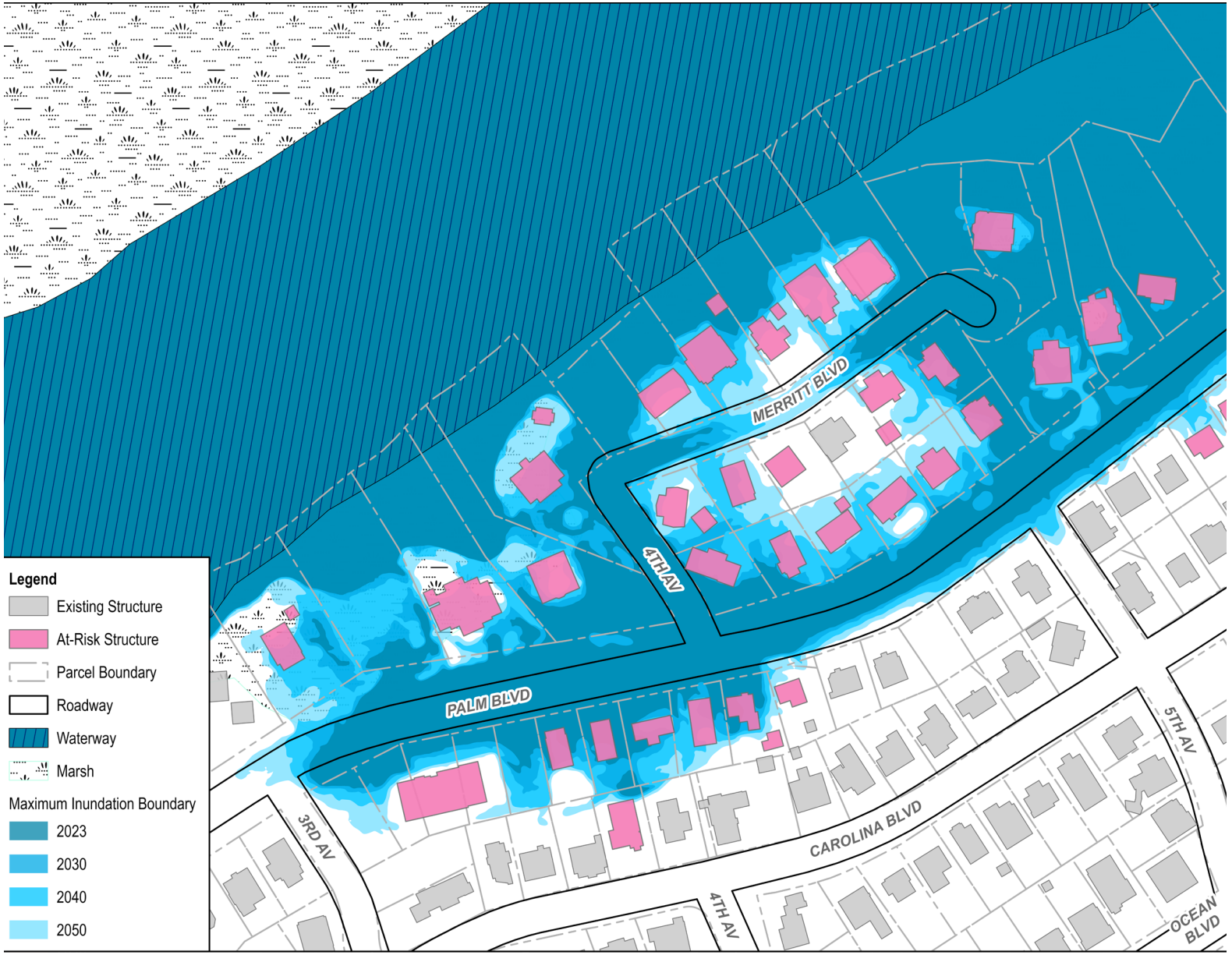
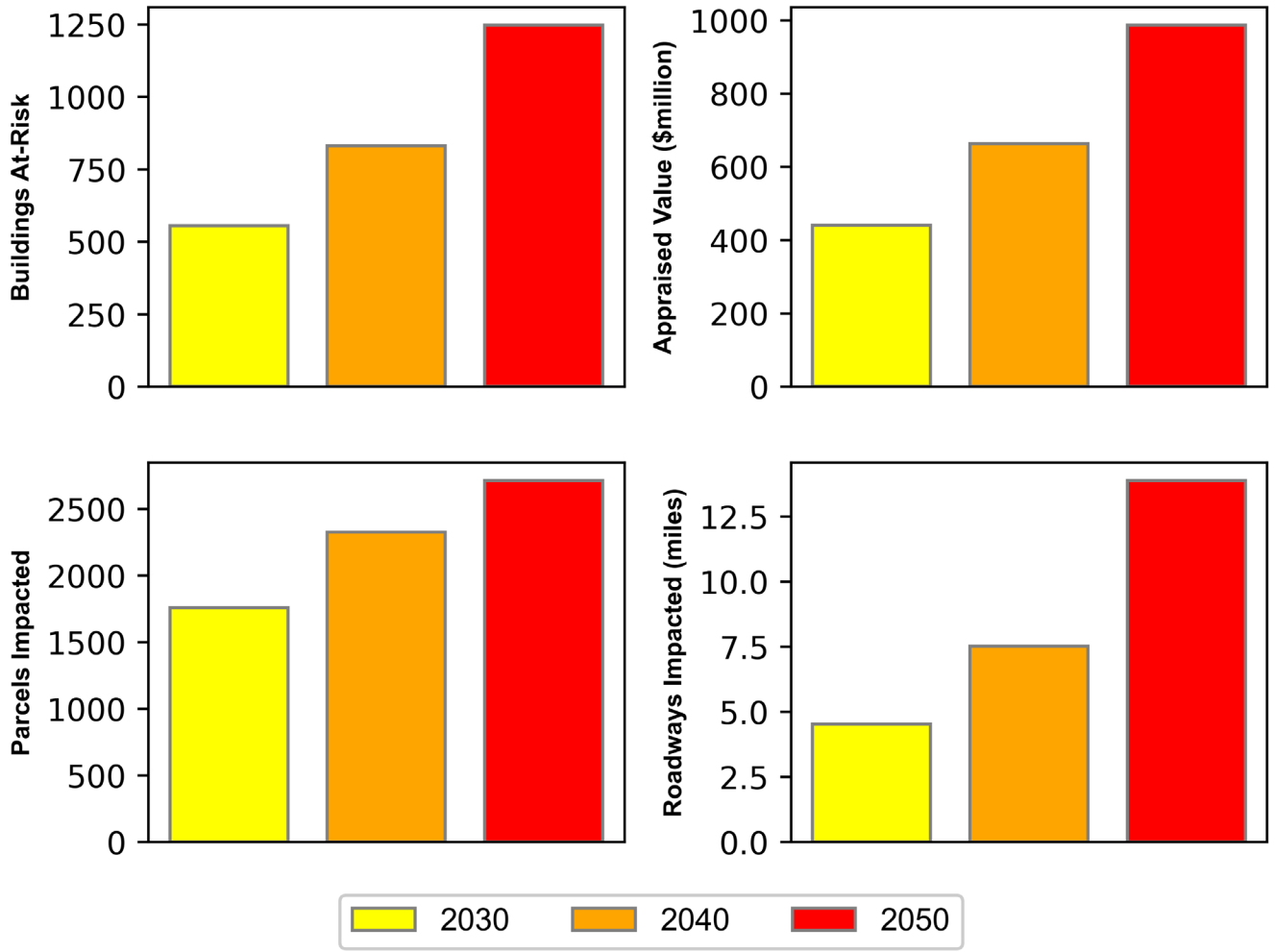


# VULNERABILITY ANALYSIS






## Impact Statistics (2050)

1. Buildings at risk ~ 1,250
2. Appraised Value ~ $1 Trillion
3. Parcels Impacted- ~2,500
4. Roadways ~ 12.5 miles

## Policies

- A Elevated tide and emergency operations policies
- B Zoning ordinance updates for redevelopment
- C Create a design tool for redevelopment
- D Conduct water quality assessment plan

## Projects

- A Infrastructure Maintenance
- B Grey/ Rigid Infrastructure
- C Green Infrastructure
- D Perimeter Protections

## Programs

- A Incentivizing private LID stormwater management
- B Purchasing or conservation of flood prone property
- C Educational Programs
- D Create a demonstration rain garden

## Policies

- A Elevated tide and emergency operations policies
- B Zoning ordinance updates for redevelopment
- C Create a design tool for redevelopment
- D Conduct water quality assessment plan


1. **Elevated Tide & Emergency Response Program**
   - Adopt operations policy
2. **Update Zoning and Building Ordinance**
   - Additional fill
   - Limit new development
   - Septic conversion
   - Stormwater requirements
3. **Create a Design Tool for redevelopment**
4. **Conduct a Water Quality Assessment Plan**

## Projects

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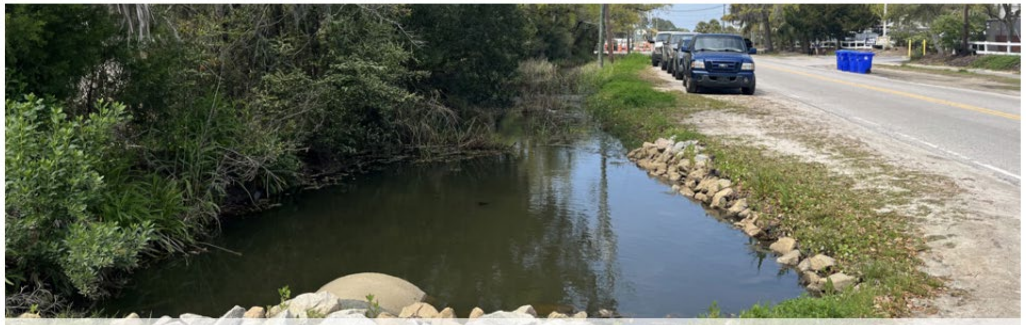
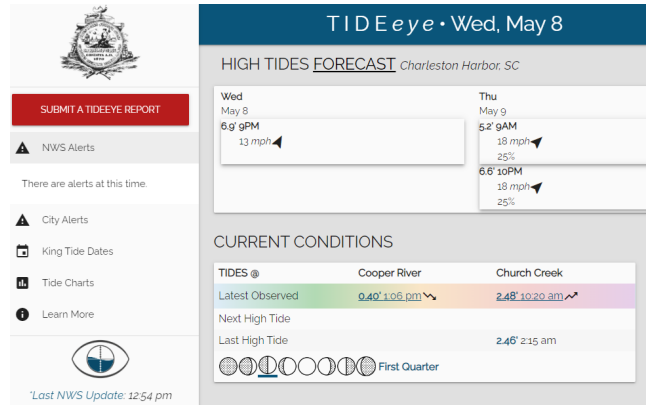
Beach renourishment at Breach Inlet



Cleaned and reinforced existing ditch in the right-of-way

1. **Infrastructure Maintenance**
   - Clean storm pipes, ditches & swales
   - Replace check valves
2. **Post – storm/flood inspections & maintenance**
3. **Web-based maintenance portal**



## Projects

- A Infrastructure Maintenance
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Check valves on marsh outfall

Increase storm pipe size and structure

1. Upgrade & replace pipes
2. Add water control structures
   - Check valves
3. Incorporate dune infiltration systems
4. Raising flood-prone roadways

## Projects

- A Infrastructure Maintenance
- B Grey/ Rigid Infrastructure
- C Green Infrastructure
- D Perimeter Protections

1. Implement living shorelines
2. Vegetated berms (public + private)
3. Structural fill
4. Beach/Dune renourishment

## Projects

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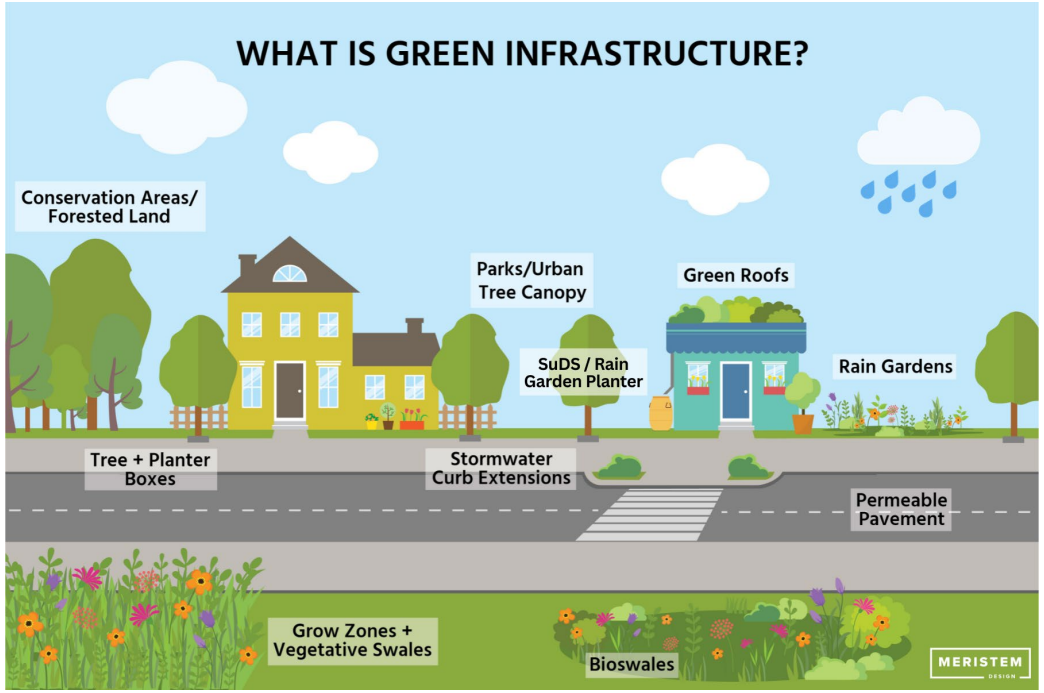


1. **Incorporate (LID) bioswales & rain gardens into public improvements**
2. **Re-establish interior canals**
   - Revegetate
   - Habitat creation
   - Amenity (increased property values)
   - Provide additional water volume/storage during storm events

## Programs

- A Incentivizing private LID stormwater management
- B Purchasing or conservation of flood prone property
- C Educational Programs
- D Create a demonstration rain garden

1. **Educational Programs**
   1. SLR Study
2. **Incentivize low impact development for private development**
   - Rain gardens/cisterns
   - Replace lawn with natives
   - Tree canopy
3. **Conservation of flood prone properties**
4. **City to create demonstration rain garden**

1. Community & City Feedback
2. Finalize Recommendations for High-Risk Areas
3. Draft Document Creation
4. Final Document
5. Revisit Document every 5 years